

# Water law and policy in Alberta: Gaps, Opportunities and Law Reforms

Jason Unger

June 23 2022



Environmental  
Law Centre

## Vision

- Our vision is a society where our laws secure an environment that sustains current and future generations and supports ecosystem health.

## Mission

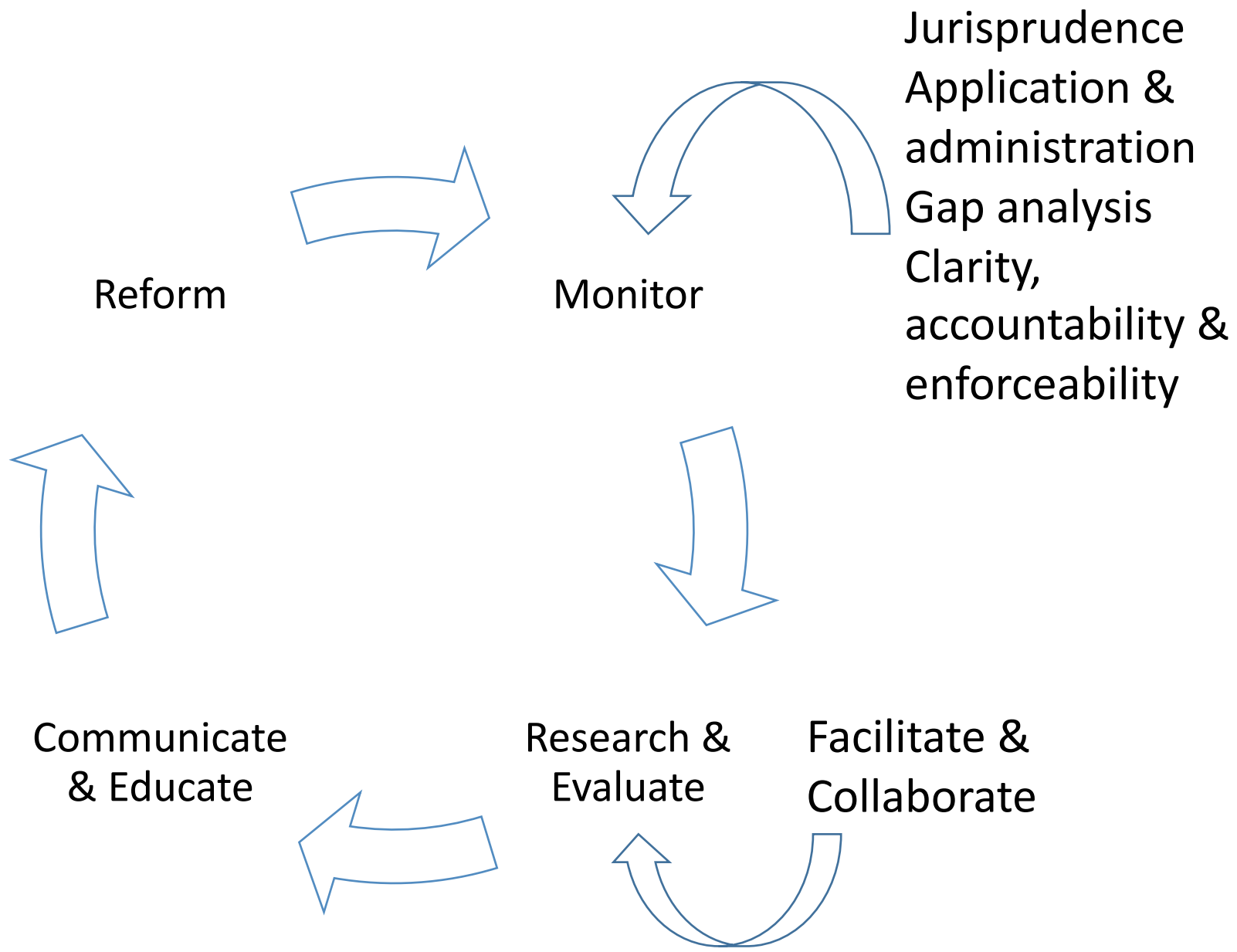
- The mission of the Environmental Law Centre is to advocate for laws that will sustain ecosystems and ensure a healthy environment and to engage citizens in the laws creation and enforcement



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Alberta **LAW**  
**FOUNDATION**

# ELC's work



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# **Aquatic Ecosystems & Alberta's Water Law**

Gaps, Opportunities  
and Law Reforms

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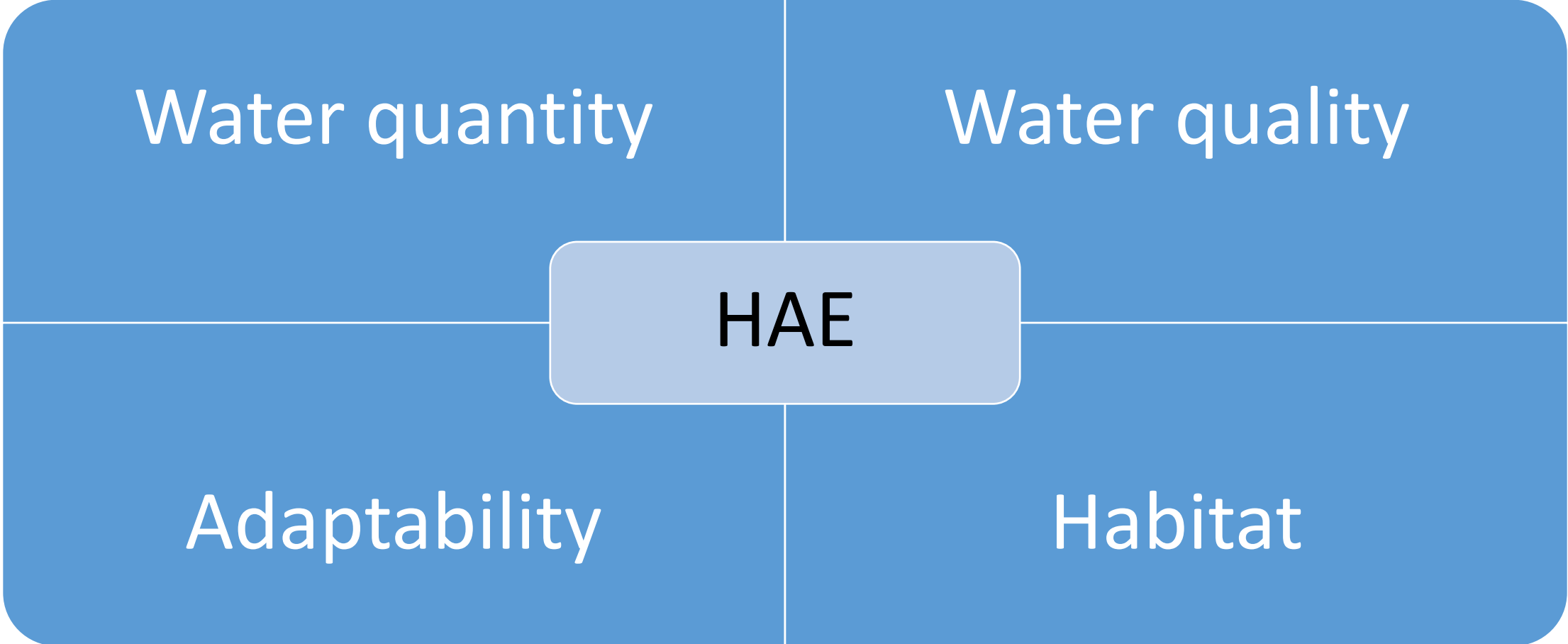
May 2022  
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[https://i0.wp.com/elc.ab.ca/wp-content/uploads/2022/05/Aquatic-Ecosystems-Gaps-Opportunities-and-Law-Reforms-May-2022\\_final.jpg?ssl=1](https://i0.wp.com/elc.ab.ca/wp-content/uploads/2022/05/Aquatic-Ecosystems-Gaps-Opportunities-and-Law-Reforms-May-2022_final.jpg?ssl=1)

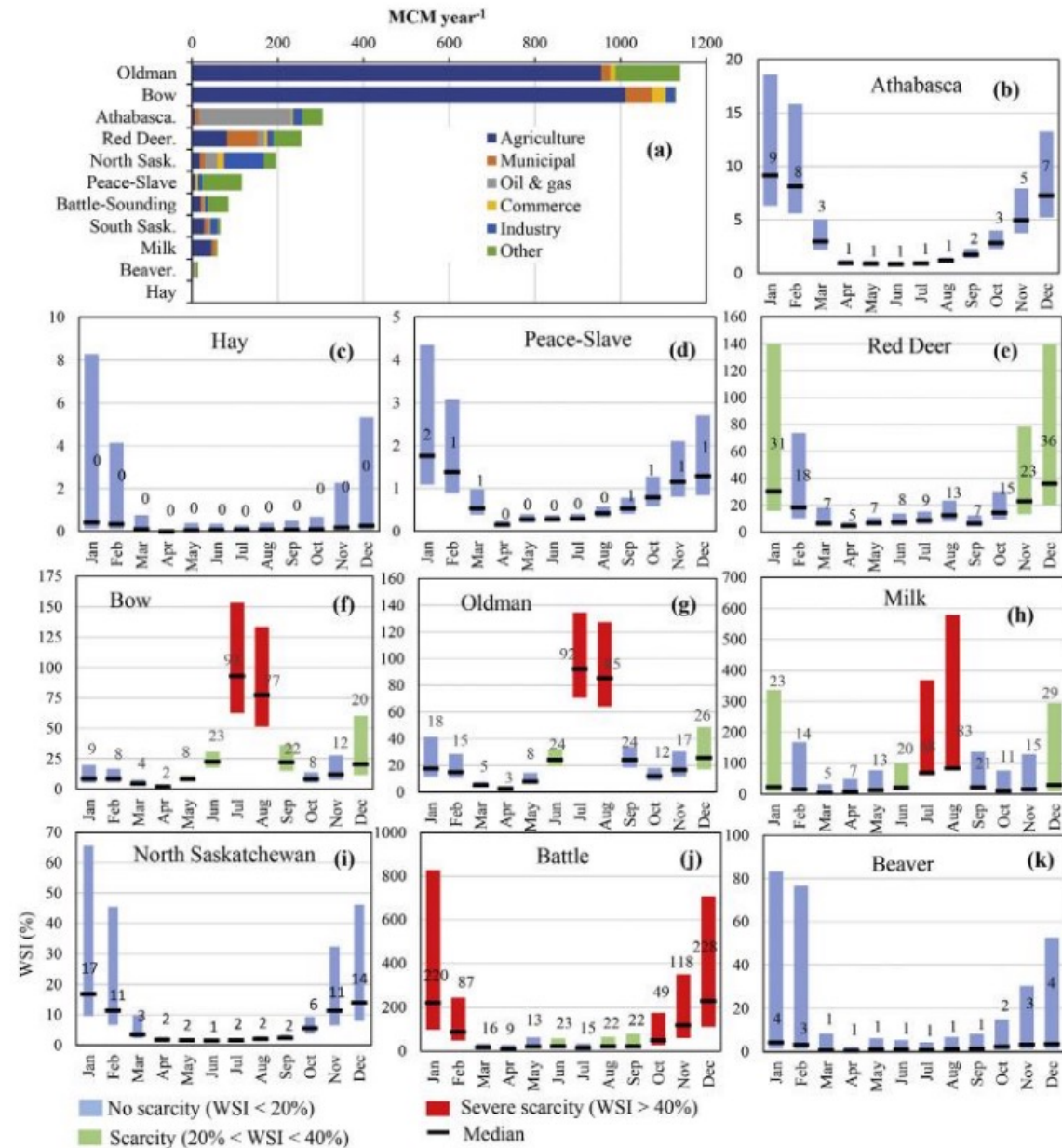
# The challenges: current and future



Faramarzi, M., Abbaspour, K., Adamowicz, W.L., Lu, W., Fennell, J., Zehnder, A.J.B, Goss, G., 2016. Uncertainty based assessment of dynamic freshwater scarcity in semi-arid watersheds of Alberta, Canada, *Journal of Hydrology: regional Studies* 9: 48-68

See the Watershed Science and Modelling Laboratory

<https://cms.eas.ualberta.ca/faramarzilab/lab-members/monireh-faramarzi/>



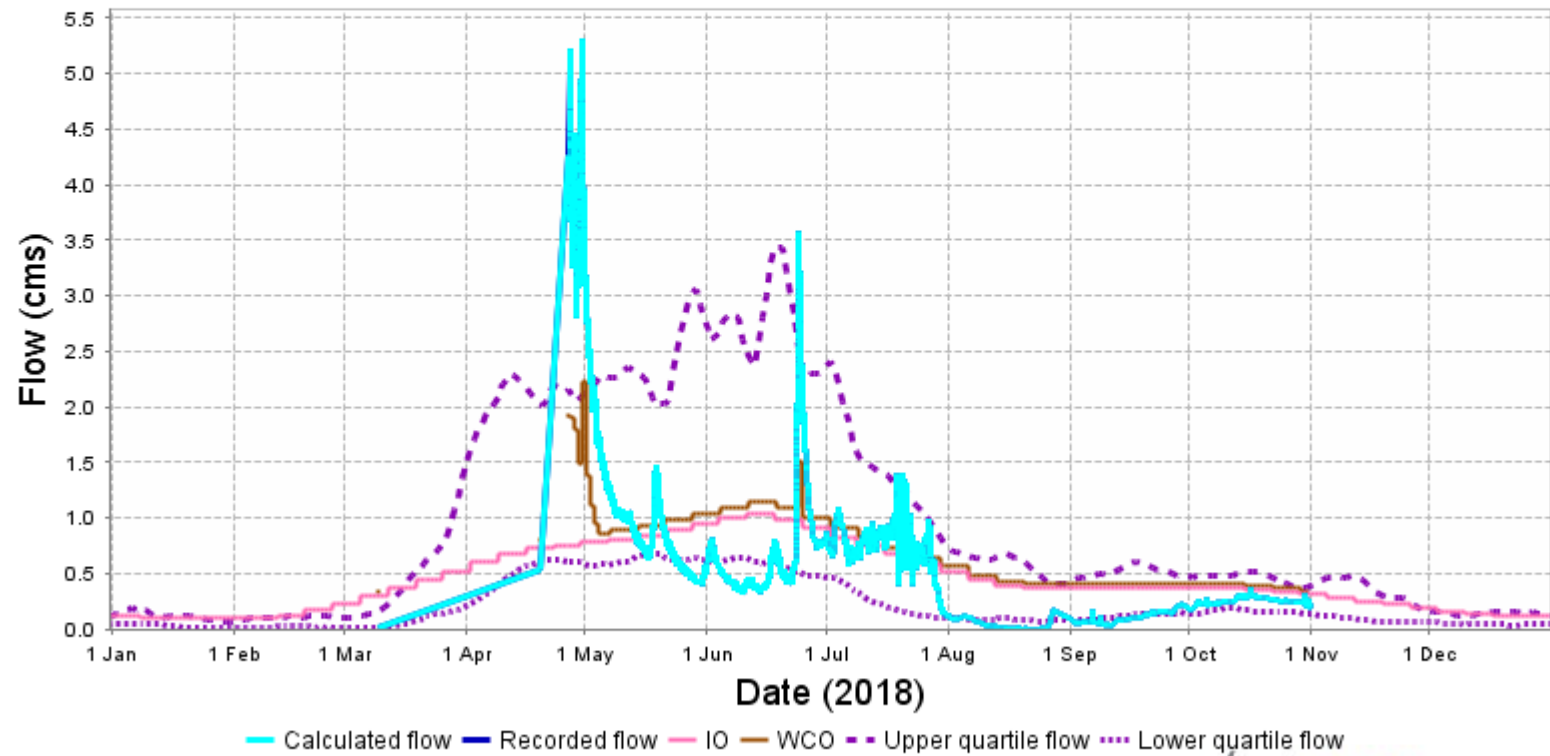
**Fig. 9.** Estimated water use of different sectors (a), and computed monthly water scarcity indicators (b–k) for different river basins. The WSI calculated as the ratio of water consumption to simulated renewable blue water resources (RBWR). The range is related to the use of L95PPU-RBWR and U95PPU-RBWR in the ratio. The colors, depicting severity of the scarcity, are specified based on the median of simulated RBWR.

# The challenges

- *The simulations show that the end-of-century increase in precipitation nearly compensates the decreased ice melt associated with almost complete deglaciation, resulting in a decrease of 7% in annual streamflow. However, the timing of streamflow is drastically advanced, with peak flow shifting from July to June, and August streamflow dropping by 67%.*
  - Aubry-Wake, C. and Pomeroy, J.W., Weather, snow and ice: Hydrological and landscape changes in the Canadian Rockies headwaters, American Geophysical Union, Fall Meeting 2020, abstract #GC030-02

Reality  
SSRB

Recorded flow (blue), calculated flow (turquoise),  
natural flow (red), IFN (green), IO (pink), WCO (brown),  
and normal recorded flow range (purple) for 05BK001  
Fish Creek near Priddis



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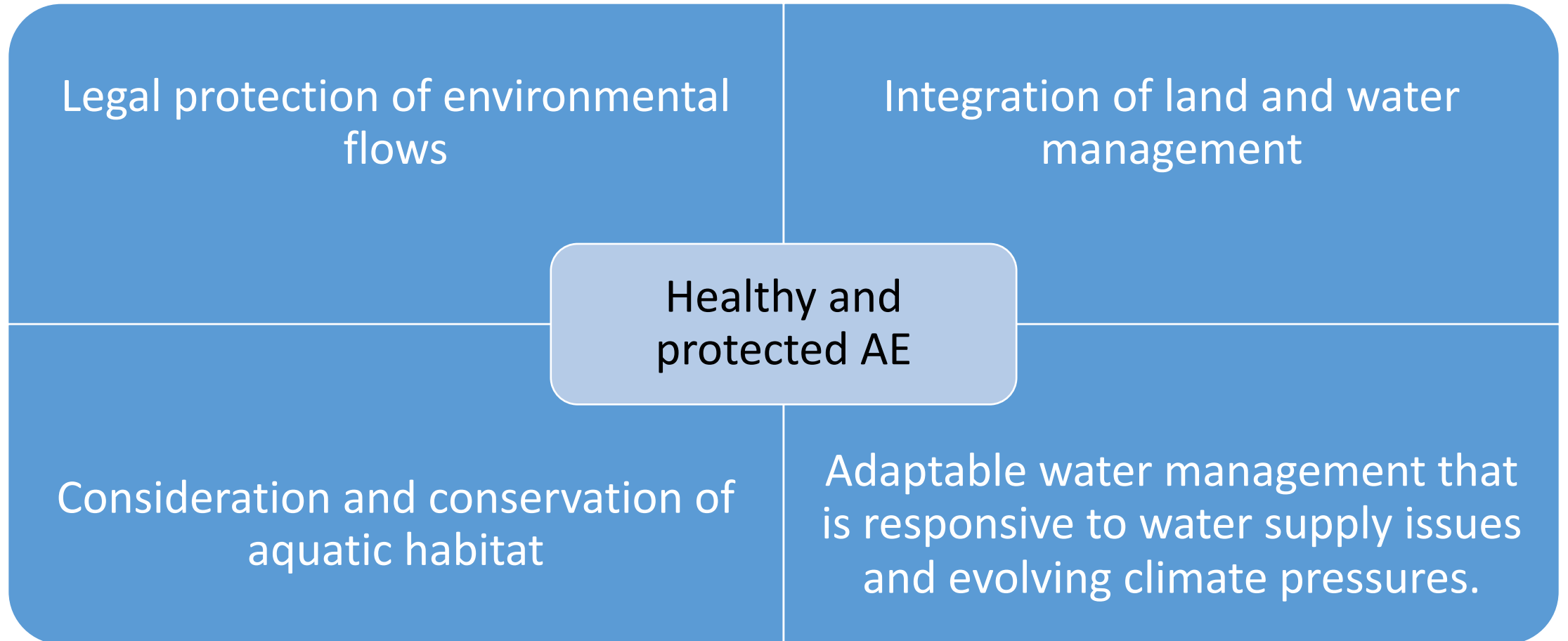
# Water quality


- Modelled future TN and TP in SSRB
- Higher increases of TP compared to TN are expected since TP and TN are going to increase 36% and 21%, respectively, by the end of the century. This research will support management plans in order to mitigate nutrient export under future changes of climate and land use.
  - Morales-Marín L, Wheeler H, Lindenschmidt KE. Potential changes of annual-averaged nutrient export in the south saskatchewan river basin under climate and land-use change scenarios. *Water*. 2018 Oct 12;10(10):1438.

# The objective

- **Alberta's water resources are managed or restored to levels where resource use is sustainable, where aquatic species diversity and abundance is maintained, and aquatic ecosystems are resilient to climate variability.**
  - Jason Unger, *Future Flows: Climate resilience, environmental flows and Alberta's water law* (Edmonton: Environmental Law Centre, 2019), online: [https://elc.ab.ca/?smd\\_process\\_download=1&download\\_id=53257](https://elc.ab.ca/?smd_process_download=1&download_id=53257).

# The foundation





The tools  
we have

New tools we  
want

# Purpose of the Water Act

- The purpose of this Act is **to support and promote the conservation and management of water**, including the wise allocation and use of water, while recognizing
- (a) the need to manage and conserve water resources to **sustain our environment and to ensure a healthy environment and high quality of life in the present and the future;**
- (b) the need for Alberta's economic growth and prosperity;
- (c) the need for an **integrated approach** and comprehensive, flexible administration and management systems **based on sound planning**, regulatory actions and market forces;
- (d) the **shared responsibility of all residents of Alberta** for the conservation and wise use of water and their role in **providing advice with respect to water management planning and decision-making;**

## Cross cutting opportunities

### Water Management Planning

- Director “must consider” matters and factors in an approved water management plan
- Still discretionary but ensures logical and rational consideration

### The Strategy for the Aquatic Environment

- Part of the framework for water management planning
- Required by law

# Water management planning

- Minister may require a WMP
- The Act: (2) The Director or other person developing a water management plan (a) may adopt an integrated approach to planning with respect to water, land and other resources;
- An approved water management plan must include certain things (section 11(3))
- ***Significant adverse effects*** in SSRBAWMP carries forward open ended discretion of the Act
- Climate change specifically excluded

**Table 2 Matters and Factors that must be considered in making decisions on applications for licences, preliminary certificates or approvals affecting surface water in the SSRB**

Matters and Factors	Guidelines
Existing, potential and cumulative effects on the aquatic environment	<ul style="list-style-type: none"> <li>• No significant adverse effect on the aquatic environment</li> </ul>
Existing, potential and cumulative effects on any applicable instream objective and/or Water Conservation Objective	<ul style="list-style-type: none"> <li>• No significant adverse effect on existing instream objectives and/or Water Conservation Objectives</li> </ul>
Efficiency of use	<ul style="list-style-type: none"> <li>• Industry standards and best practices</li> </ul>
Net diversion	<ul style="list-style-type: none"> <li>• Likely an amendment</li> <li>• Existing allocation does not increase</li> <li>• Quality and timing of return flow should be benign or beneficial for environment</li> </ul>
Existing, potential, and cumulative hydraulic, hydrological and hydrogeological effects	<ul style="list-style-type: none"> <li>• No significant adverse effect</li> </ul>
With respect to irrigation, the suitability of the land for irrigated agriculture	<ul style="list-style-type: none"> <li>• The land must be suitable for irrigated agriculture: Class 4 or better in accordance with the standards of Alberta Agriculture, Food and Rural Development</li> </ul>
Existing, potential, and cumulative effects on the operation of reservoirs or other water infrastructure	<ul style="list-style-type: none"> <li>• No significant adverse effect on operations unless the reservoir or infrastructure licensee agrees it is feasible to adjust operations to mitigate effects</li> </ul>
First Nation Rights and Traditional Uses	<ul style="list-style-type: none"> <li>• Government of Alberta First Nation Consultation Policies and guidelines on Land Management and Resource Development.</li> <li>• Agreements with First Nations.</li> </ul>



# “Matters and factors”

- Climate/future supply related considerations
- Land use decisions including riparian condition (re approvals) and loading impacts
- Temperature impacts
- Adoption of principles and methodologies: precaution, pollution prevention

# The Strategy

- The Strategy for the Protection of the Aquatic Environment, may include:
  - (a) identification of criteria to determine the order in which water bodies or classes of water bodies are to be dealt with,
  - (b) guidelines for establishing water conservation objectives,
  - (c) matters relating to the protection of biological diversity, and
  - (d) guidelines and mechanisms for implementing the strategy.

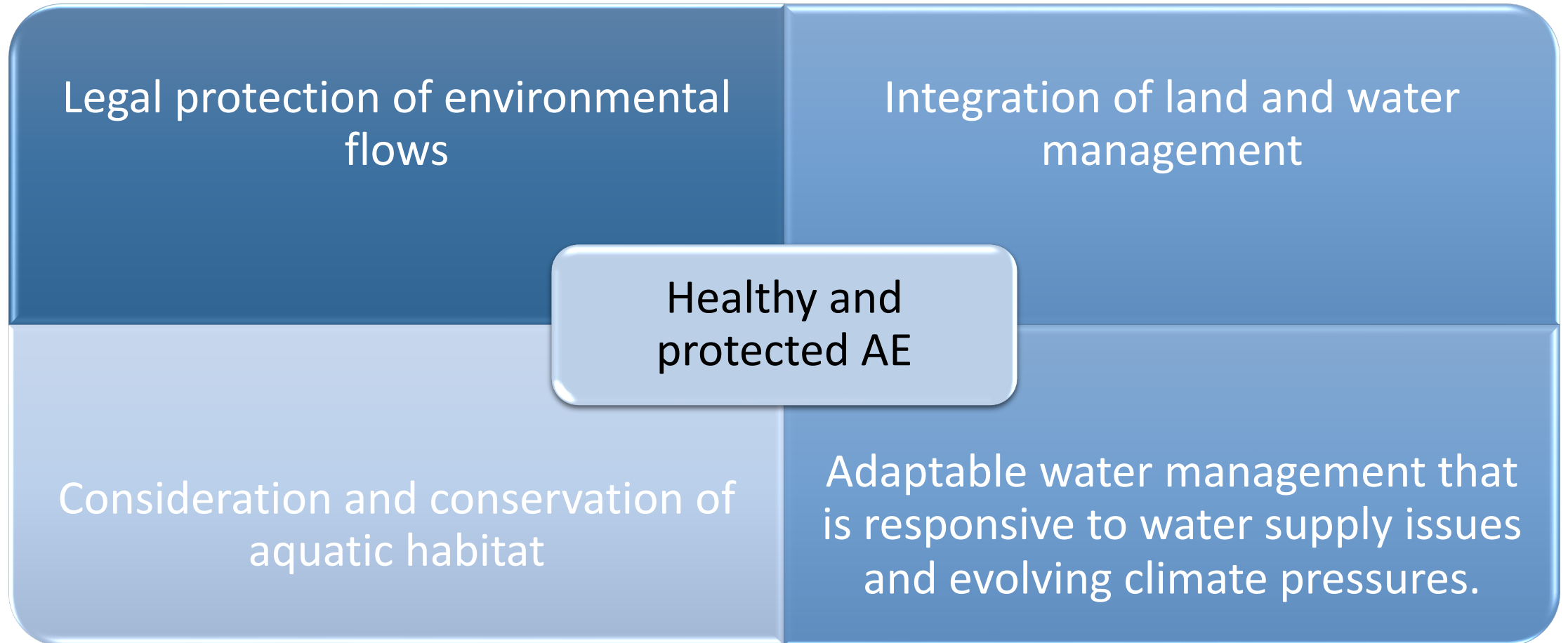
# The reality

- The *Strategy* lists certain elements that are important to aquatic ecosystems and highlights knowledge and data needs that must be met;
- the stated objective that “protection will occur through maintaining, restoring and enhancing current conditions”, however there is no guidance as to how this will occur
- The implementation section of the *Strategy* (at pp. 34-37) is little more than an enumeration of policies and procedures.

# Implementation of the Strategy

- “the ecological integrity of the aquatic environment can be protected through effective management of water quantity, water quality, habitat and species”
- Water management plans are referenced as a tool for implementation across the issues identified
- WCOs

# The foundation



# Legal Protection for Instream Flows

- Crown reservation
  - WCO
  - WMPs
  - Strategy
- 
- Policy direction in lieu – Water Allocation Directive

# Crown Reservation

- Minister may reserve water not currently allocated under licence or registration in order to determine how the water should be used or for any other purposes.
- May include terms and conditions and specify how the Director may allocate the reserved water.
- May prescribe priority (at date of reservation).
- Director may refuse applications for reserved water
- Current reserve is multi purpose (e.g. coal mine in Oldman basin).

# Opportunity: Crown Reservation

- Can be focused on aquatic ecosystem flows
- Can be framed for WCO licences and create adaptable terms and conditions
- Mechanism of planning can be set out in the Orders.
- Provides buffer and precautionary = adaptability



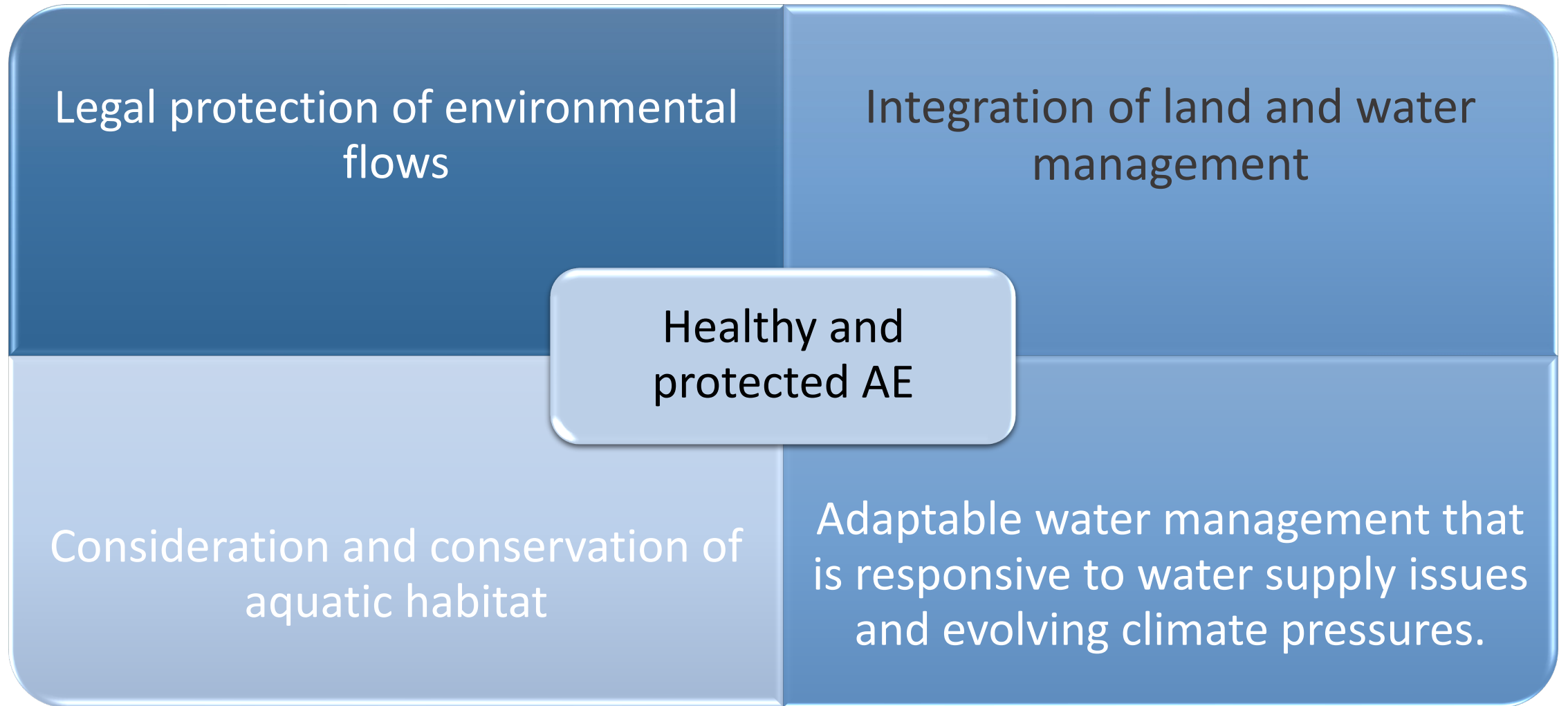
# Water Conservation Objectives

- Set by Director (have been incorporated into plans)
- Amount and quality necessary for
  - protection of a natural water body or its aquatic environment, or any part of them,
  - protection of tourism, recreational, transportation or waste assimilation uses of water, or
  - management of fish or wildlife,

# WCOS

- The setting of WCOs across the province has been part of AWC recommendations and government action plans but there was little movement outside of the SSRB (and Battle River basin)
- WCOs allow granting of priority to Crown licences giving an added layer of accountability (i.e. transparency)

# The foundation



# Water Act and integration of land and water

- Water management plans can dictate “matters and factors” of both licences and approvals that are directly linked to water quality issues.
- WCOs can include quality parameters that can guide discretion
- WMPs could be used to manage impairment and destruction of riparian areas (including cumulative effects)

# Integration of land and water: ALSA regional plan

(b) set or provide for one or more **thresholds** for the purpose of achieving or maintaining an objective for the planning region;

...

(d) describe or specify the **monitoring** required of thresholds, **indicators** and **policies**, who will do the monitoring and when, and to whom the monitoring will be reported

(e) describe or specify the **times and means by which**, and by whom, an **assessment** or analysis will be conducted to determine if the objectives or policies for the planning region have been, are being or will be achieved or maintained;

(f) describe or specify the **actions or measures** or the nature of the actions or measures to be taken to achieve or maintain the objectives and policies in the regional plan, and by whom they are to be taken or co-ordinated, if

(i) an adverse trend or an adverse effect occurs;

(ii) an objective or policy is or might be in jeopardy or a threshold is or might be exceeded or jeopardized;

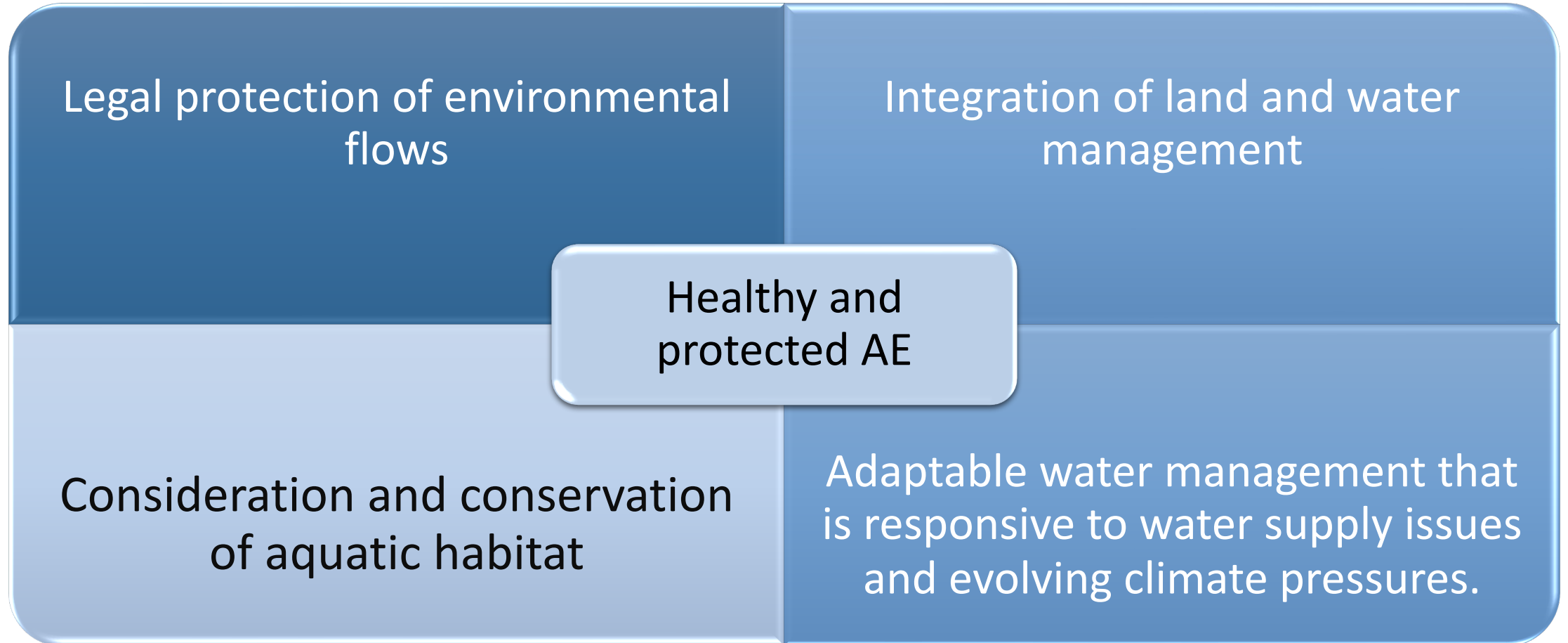
(iii) an objective or policy has not been achieved or maintained, is not being achieved or maintained, or might not be achieved or maintained;

(g) describe and **convey to a person** named in the regional plan **authority to achieve or maintain an objective or policy, which may include delegating authority** under any enactment or regulatory instrument to the person named;

# ALSA potential

- To create a system of land use linked to water use that could include:
  - Loading (total maximum loads)
  - Riparian management
- Integration of land and water through a delegated authority

# The foundation

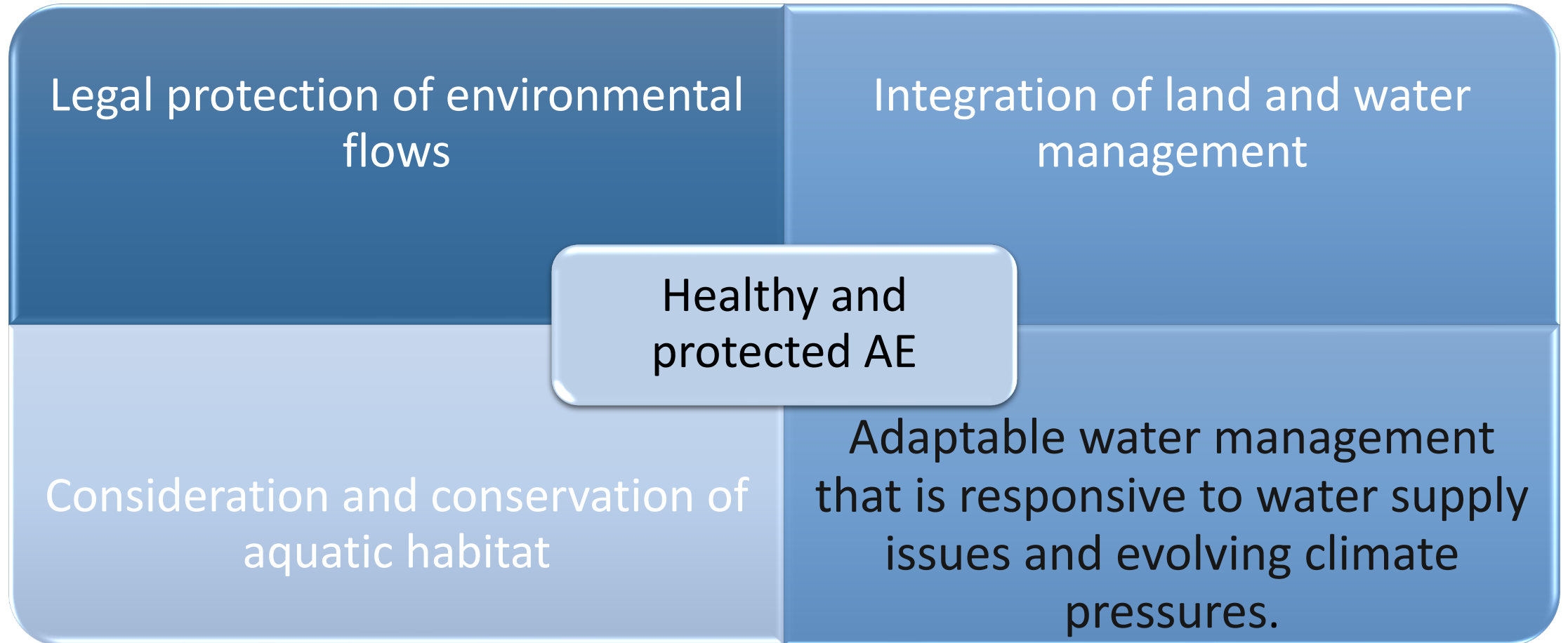


# Aquatic Habitat

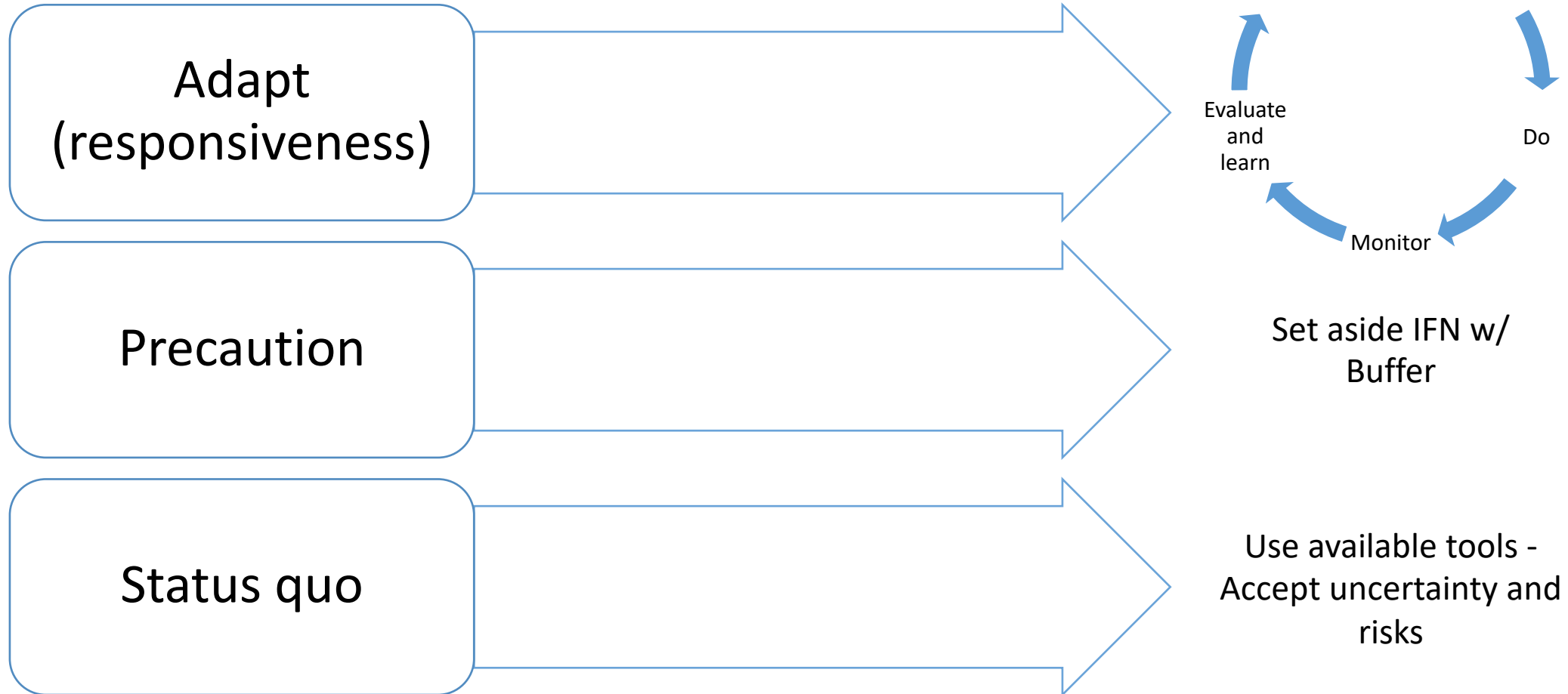
- Mix of federal and provincial jurisdiction
- Renew the Strategy with directed implementation around biodiversity
- Aquatic Biodiversity Management Frameworks (ALSA)
- Habitat based regulation/legislation



# The foundation



# Embracing uncertainty – regulatory and governance responses



# Adaptability and Climate pressures

- Proactivity in WCOs and WMPs (in basins where IFN can still be managed)
- Relaunch dialogues around deemed licences, adaptive capacity, and accountability for ecosystems needs.
  - In the interim clarify how discretion may be exercised in relation to conditions on deemed licences
- Future focused: managing to supply, not to allocation

# Conclusion

- 2000s saw a move away from planning for water resources
- Statutory based planning, strategies and conservation objectives largely cast aside
- Embracing a planning mindset means embracing decisions based on plans and scientific direction
- Are we ready?
- SSRB is likely in need of greater disruption and innovation. = Intentional disruption vs. chaotic disruption

# Questions

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